

WHAT IS CLAIMED IS:

1. A cooling unit for an engine comprising a cylinder head formed with an intake port on one side and with an exhaust port on the other side, a water jacket formed in a cylinder block in surrounding relationship with a cylinder wall which defines cylinder bores and opening into the surface of the cylinder block, a gasket held sandwiched between the cylinder head and the cylinder block to seal therebetween, and a control board on the gasket and inserted into the water jacket;
characterized in that the control board is formed to be arcuate in conformity to the profile of the water jacket and is disposed only toward the intake port.
2. A cooling unit for an engine comprising a cylinder head formed with an intake port on one side and with an exhaust port on the other side, a water jacket formed in a cylinder block in surrounding relationship with a cylinder wall which defines cylinder bores and opening into the surface of the cylinder block, a gasket held sandwiched between the cylinder head and the cylinder block to seal therebetween, and a control board on the gasket and inserted into the water jacket;
characterized in that the control board is formed to be arcuate in conformity to the profile of the water jacket, the control board being disposed toward each of the intake port and the exhaust port, a spacing between the control board which is disposed toward the exhaust port and the cylinder wall being set to be narrower than the spacing between the control board disposed toward the intake port and the cylinder wall.
- 25 3. A cooling unit for an engine comprising a cylinder head formed with an intake port on one side and with an exhaust port on the other side, a water jacket formed in a cylinder block in surrounding relationship with a

cylinder wall which defines cylinder bores and opening into the surface of the cylinder block, a gasket held sandwiched between the cylinder head and the cylinder block to seal therebetween, and a control board on the gasket and inserted into the water jacket;

5 characterized in that there are a plurality of cylinder bores and the
control board is formed to be arcuate in conformity to the profile of the water
jacket, the control board being disposed toward the intake port and toward the
exhaust port for each cylinder bore, a spacing between the cylinder wall and
the control board for the cylinder bore which is located adjacent to the inlet of
10 a cooling water passage which feeds a cooling water to the jacket being set to
be wider than a spacing between the cylinder wall and the control board for
the cylinder bore which is located remote from the inlet.

4. A cooling unit for an engine comprising a cylinder head formed with an intake port on one side and with an exhaust port on the other side, a water jacket formed in a cylinder block in surrounding relationship with a cylinder wall which defines cylinder bores and opening into the surface of the cylinder block, a gasket held sandwiched between the cylinder head and the cylinder block to seal therebetween, and a control board on the gasket and inserted into the water jacket;

20 characterized in that there are a plurality of cylinder bores and the
control board is formed to be arcuate in conformity to the profile of the water
jacket, the control board being disposed toward each of the intake port and the
exhaust port for each cylinder bore, control boards disposed toward the intake
port for each cylinder bore being connected together and the control boards
25 disposed toward the exhaust port for each cylinder bore being connected
together,

further comprising a thermo-valve disposed between the control

board disposed toward the intake port and the control board disposed toward the exhaust port at a location adjacent to the inlet of a cooling water passage which feeds a cooling water to the water jacket and opening when the temperature of the cooling water rises to a given temperature.

5 5. A cooling unit for an engine according to Claim 4 in which the thermo-valve comprises a pair of bimetal members, the bimetal members having their one end adjacent to each other, the other end of each of the bimetal members being secured to the end of the control board which is disposed toward the intake port or the exhaust port, the bimetal members 10 being deformed when the temperature of the cooling water rises to a given temperature to produce a gap between the pair of bimetal members to open.

6. A cooling unit for an engine according to one of Claims 2 to 5 characterized in that the control boards have different sheet thicknesses to produce different spacings.

15 7. A cooling unit for an engine according to one of Claims 1 to 6 characterized in that the control board has a sheet thickness which is different between a portion thereof which is disposed toward the gasket and another portion disposed toward the bottom surface of the water jacket.